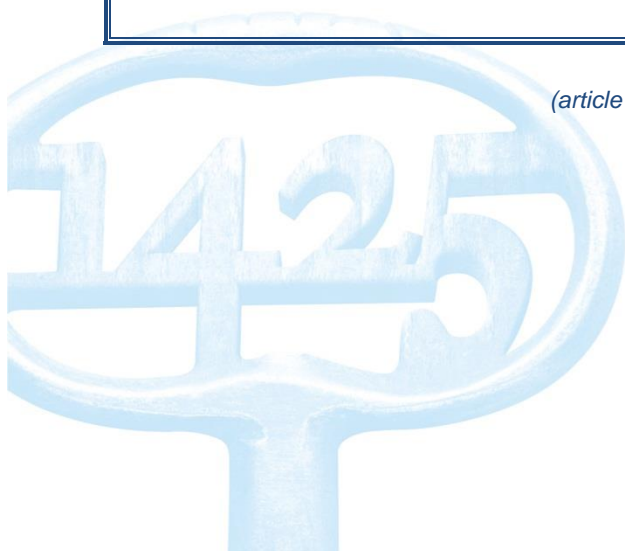




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A Core Curriculum for the Continuing Professional Development of Nurses Working in Cardiovascular Settings: Developed by the Education Committee of the Council on Cardiovascular Nursing and Allied Professions (CCNAP) on behalf of the European Society of Cardiology

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1. Introduction

This document provides an unabridged version of a core curriculum, published in the European Journal of Cardiovascular Nursing¹ developed to inform cardiovascular nursing education in Europe. The core curriculum was designed to function in two ways. Firstly the curriculum provides a 'map' of key content outlined in the syllabus along with suggestions for approaches to learning and assessment. Secondly the curriculum can be used as a 'tool' to support and inform the continuing education and professional development of nurses working in cardiovascular settings across Europe. In particular the curriculum aims to 'bridge' the educational gap between initial qualification as a nurse and the advanced and/or specialist nursing practice required for nurses to work to their full potential in cardiovascular settings. The document represents the final output from an ambitious project with inspiration drawn from the Education committee of the ESC who identified the need to develop both core² and specialist curricula to guide the streamlining of educational preparation of physicians training to become cardiologists in Europe. A core curriculum for general cardiology was developed with accompanying educational modules delivered through an innovative E-Learning platform (EsCel)³. In following suit we faced additional challenges not shared by our medical colleagues. A major consideration concerned the decision about the appropriate educational level at which to 'set' the core curriculum for cardiovascular nursing. Unlike our medical colleagues, the nursing workforce in Europe is not an all graduate profession. Moreover many nurses do not have the opportunity to apply for professional registration. We acknowledge and respect the diversity of educational provision for nurses across Europe⁴ and remind readers that this document contains a sample curriculum designed to be used flexibly in a way determined by the diverse needs of the user. We have purposefully avoided reference to particular benchmark statements as there are some variances in legal frameworks, professional regulatory requirements, and educational and organisational quality assurance processes. Different countries and institutions will have developed or adopted specific benchmarks to fulfil particular needs or to meet country-specific legislative or regulatory requirements. For this reason we have focused our attention upon central themes and ideas which we believe characterise the learning and education required to equip a

newly qualified nurse to work in a cardiovascular setting. We recognise that a continuum of expertise exists leading to advanced/specialist practice not covered in this core curriculum. The logical building and progression of nursing knowledge, understanding and skills is important. As such curricula that cover advanced/specialist practice are being updated⁵ or are under development. The ESC is made up of myriad organisation and associations. It is envisaged that the core curriculum will articulate with advanced/specialist curricula produced in the future by each group represented in Figure 1. Educational modules that reflect the core curriculum content are also under development.

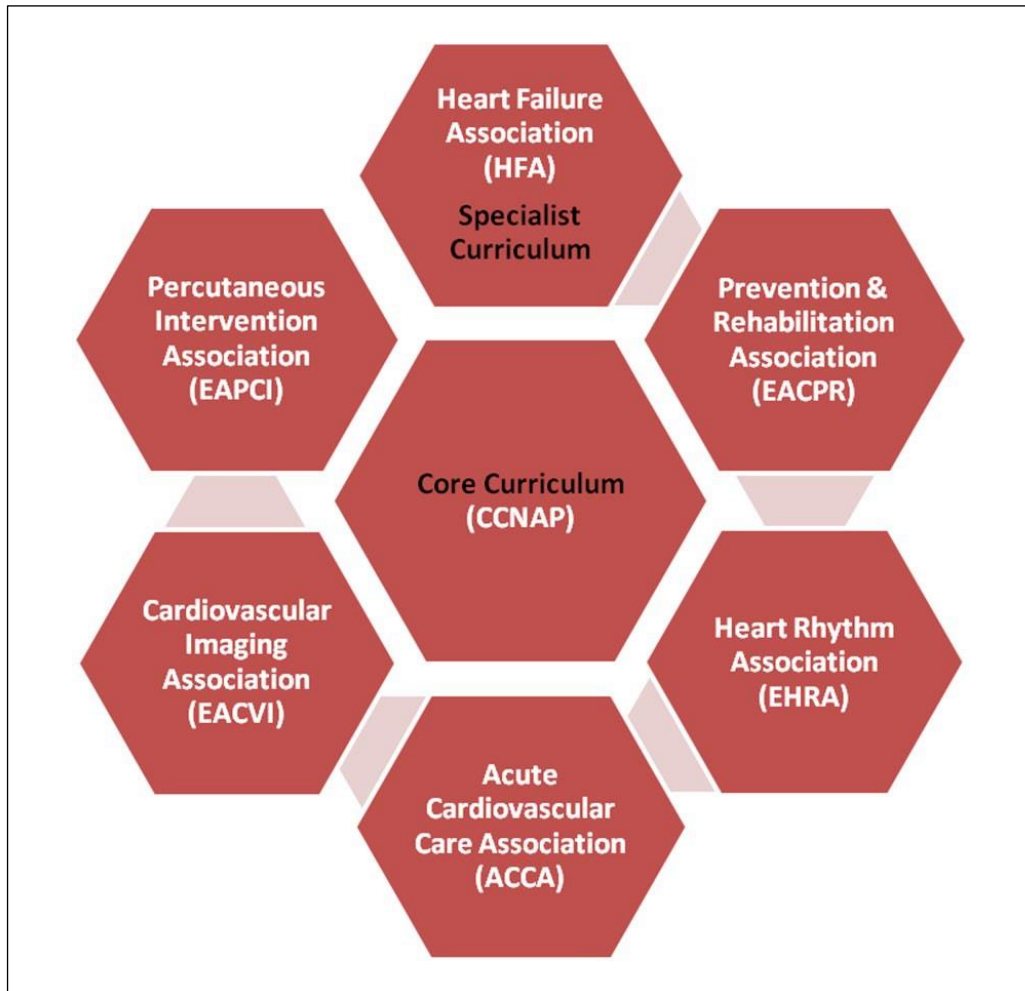


Figure 1. A diagrammatic representation of how the core curriculum ‘fits’ with other advanced/specialist nursing curricula under development.

2. Pedagogical Approach and Educational Philosophy

There are many definitions of pedagogy. Perhaps the simplest is ‘The science of teaching’⁶. However, the term denotes more than just a set of teaching techniques. Pedagogy encompasses:

- why it is taught or learned - the underpinning values, philosophy or rationale.
- what is taught/learned - the content
- how it is taught or learned - approaches to teaching and learning

The three elements are intertwined and the ‘why’ will have a strong influence on what is taught or learned and how. We gave attention to all three elements in the development of the curriculum. In the next section we present a range of theories and ideas that informed the curriculum.

2.1 Learners and Learning at the Centre

Our view is that the learner should be at the heart of the learning process. Accordingly we promote the idea of learners as partners who are encouraged to shape their own learning. The concept of the ‘expert

learner' is central to current developments in the personalisation of learning in which the learner is encouraged to plan, organise and evaluate their own learning⁷. We share this view and emphasise the importance of fostering active, participative and autonomous learners to cultivate professional autonomy, deliver evidence based practice and lead the profession of nursing. Our belief is that the focus of educational practice should shift away from the view of the teacher as the imparter of educational content and information towards the model of the teacher as the learning facilitator. In this way the role of the teacher is to support the learner, both directly and indirectly, in all aspects of learning.

2.2 Co-operative Learning

Co-operative learning is an approach commonly used in education which recognises the value of learners working together on structured tasks⁸. In contrast to individual learning, which can foster a competitive environment, co-operative learning capitalises on individuals learning from one another. Effective co-operative learning recognises that success is achieved only if all members of the group are accountable and work together in an interactive way to achieve shared goals⁸. This approach is especially appropriate because it mirrors the multidisciplinary teamwork and collaboration that occurs in clinical practice.

2.3 Experiential Learning

Educational theory recognises the significance of learning from experience. This is especially pertinent to nursing education which is firmly grounded in clinical practice. Experiential learning recognises the importance of doing, observing, thinking, reflecting and planning as part of creating knowledge⁹. Learners make discoveries and experiment with knowledge first hand, instead of hearing about, or reading about, the experiences of others. When learners reflect on their experiences, they develop new skills and attitudes, new theories and ways of thinking, resulting in deep understanding and emotional and affective change. Experiential learning enables us to construct new knowledge, systematically, from our experiences.

The nurse theorist, Patricia Benner, provides us with a useful model that describes a continuum of nursing experience made up of five levels ranging from novice to expert⁹ (Figure 2). We used this model to help us think about the intended educational level of this curriculum. We concluded that our students would be considered competent in adult nursing, if they had completed initial educational preparation for nursing within their country, but with regard to cardiovascular nursing would be considered to be at novice level. This enabled us to distinguish between the educational content that would be included in the core curriculum as opposed to more specialist or advanced educational content.

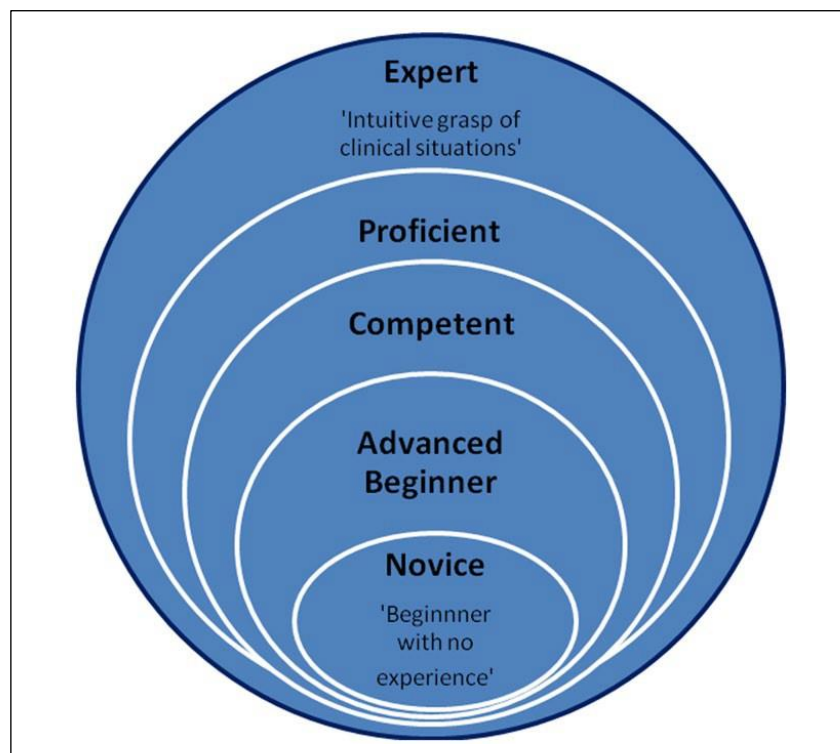


Figure 2. The continuum of nursing experience.
Adapted from Benner (1982)¹⁰

3. Assessment for Learning

Assessment and feedback is built in to all successful teaching and learning activities but the process does not always have to be teacher led and can incorporate peer or self-assessment. In addition computer-based tasks, if carefully designed, can build in intrinsic feedback that encourages learner reflection and improvement. Rather than being prescriptive we have opted to identify some key factors to consider in the development of assessment approaches.

Methods - What assessment methods will be used to enable the learner and the teacher to judge whether the learning outcomes have been met.

Purpose - It is important to highlight that assessment can be used for diagnostic (to judge starting levels), formative (to give feedback) and summative (to grade) purposes. It is important to highlight both formative (to give feedback) and summative (to grade) assessments.

Grading - To communicate relative importance or the breakdown of marks for different components of the assessment and their individual assessment criteria.

Procedures – e.g. re-takes, marking processes, schedules (when can assessments be taken) etc Some suggested assessment approaches are;

- Written essay
- Short answer exam
- Reflection/ Reflective writing assignments
- Multiple choice questions
- Observed structured clinical examination
- Assessment of competence in practice
- Blogs and Learning Diaries
- Portfolio
- Viva voce
- Poster presentation, vignettes & discussions

3.1 Approaches to Learning and Teaching

Each educational institution will have a unique approach to teaching, learning and assessment. Our aim is not to be prescriptive but to outline a range of approaches with the emphasis being on the use of a mix of modes that could be used to support learners in achieving the given learning outcomes. The choice of teaching and learning approaches will be guided by the course philosophy and the way in which the course is delivered. Some examples are:

- Didactic lectures
- Seminar group discussions
- Online lectures and interactive tutorials
- Discussion boards
- Clinical teaching
- Problem based learning case study discussions
- Experiential learning through simulated practice.
- E-Learning such as online information with self tests
- Guided reflection
- DVD and CD Rom
- Peer led team learning
- Journal clubs

4. The Core Curriculum

4.1 Aims

The specific aims of the core curriculum were that on completion of training pathway students should have provided evidence of being able to:

- Understand and demonstrate coherent and detailed knowledge and understanding of adult cardiovascular nursing care
- Develop clinical skills in cardiovascular nursing to support practice within the legislative and regulatory frameworks and scope of practice of the host country

- Demonstrate the delivery of high quality, age/gender appropriate and culturally competent care, characterised by a caring and compassionate approach and underpinned by effective communication skills
- Work in partnership with service users, carers, and families to promote positive health and prevent illness through individualised care that accounts for varying health literacy levels
- Identify and implement clinical guidelines and other sources of research evidence relevant to nursing practice in order to provide nursing care that is safe, effective and evidence based
- Work inter-professionally with all members of the health and social care team to identify health care needs, and develop individualised plans of care leading to positive health care outcomes for adult service users, families and carers
- Reflect upon and apply ethical and legal principles to cardiovascular nursing care and practice within the professional boundaries and guidelines of the professional regulatory bodies and institutions of the host country
- Develop leadership and management skills and contribute to service design and delivery in order to maintain and improve standards of care

5. Content

The identification of relevant content constituted the first step in the development of the core curriculum. The syllabus was developed by a panel of experts and subject to rigorous review as part of a consultation process. The syllabus and core curriculum seek to shift the emphasis away from the biomedical approach to care delivery and strengthen the person and family centred perspective. The key components of person and family centred care identified in a concept analysis¹¹ were integrated into the content; these were effective communication, learning and teaching skills, the ability to facilitate patient autonomy and provide individualised care in a respectful manner. In addition the key markers of a high quality hospital care as reported by in-patients were integrated into the syllabus¹². The importance of research and evidence based practice is emphasised and learning and teaching approaches can reflect this requirement through fostering autonomous inquiry and the implementation of ESC guidelines. Moreover it is acknowledged that the cardiovascular patient population will increasingly be composed of people aged over 65 years of age living with multiple co-morbidities such as dementia¹³.

The syllabus content is arranged under 8 themes which characterise the core curriculum shown in Figure 3. Although these are presented separately some overlap across themes is unavoidable.

5.1 Syllabus

In this section the 8 themes that characterise the core curriculum shown in Figure 3 will be presented in detail.

Theme 1: Fundamentals of Cardiovascular Pathophysiology

Content will include learning about anatomy, pathophysiology and physical manifestations of common cardiovascular conditions together with the recognition of normal and altered physiological parameters and their clinical significance. We arranged this content to reflect four broad groupings;

1. Atherosclerotic disease and associated conditions: (ischaemic heart disease, stroke and peripheral vascular disease)
2. Heart rhythm and conduction disorders (tachy/brady arrhythmia, conduction defects)
3. Structural abnormalities of the heart (grown up congenital heart disease GUCH, valve disease)
4. Heart muscle disorders (infective, inflammatory, acute and chronic heart failure, cardiogenic shock)

Theme 2: Optimising Cardiovascular Health for People and Populations

Content will include learning about cardiovascular risk assessment and interventions to support prevention together with instruction about how such health priorities can be implemented in practice;

- a) The burden of cardiovascular disease across Europe/world (health inequalities and patterns of comorbidity across the life span)
- b) Modifiable, non-modifiable, novel and emerging cardiovascular risk factors across the lifespan and advances in genetic testing
- c) Primary and secondary prevention strategies (population and individual level)

- d) Individualised and family centred cardiovascular risk assessment
- e) Introduction to theory and principles of behaviour change
- f) Interventions (population, individual and family focused) to promote a healthy lifestyle and support adherence to prescribed medications
- g) Implementation of clinical guidelines in practice (nursing contribution)

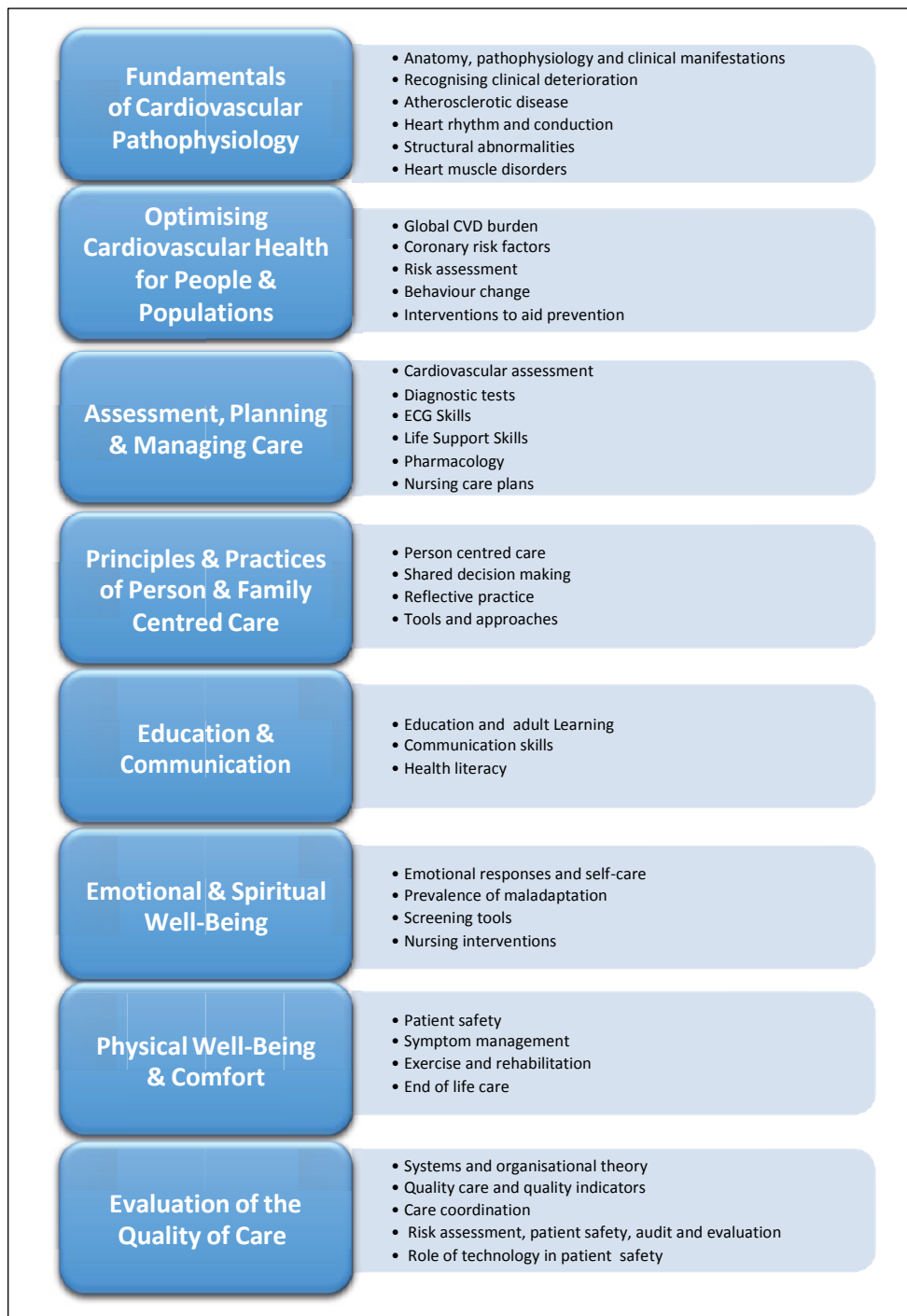


Figure 3. Core Curriculum Themes and Indicative Content.

Theme 3: Assessment, Planning and Managing Care

Content covered in initial nurse education will be further developed to focus upon care of the patients living with a cardio-vascular condition. Content will include:

- Cardiovascular health assessment (taking a cardiac history and focused physical assessment) and review of life support skills
- Diagnostic tests including ECG/telemetry (non-invasive imaging such as echocardiography, magnetic resonance imaging, computerised tomography, nuclear imaging and invasive imaging such as cardiac catheterisation and angiography)

- c) Common pharmacological agents prescribed in cardiovascular care (antihypertensives, diuretics, lipid lowering agents, antiplatelet agents, antithrombotics, thrombolytics, antiarrhythmics, initiation, mode of action and inter- actions)
- d) Development, implementation and evaluation of a nursing care plan using evidence-based clinical guidelines in practice with emphasis on nursing contribution

The aforementioned cross-cutting 'threads' will be applied comprehensively across the key cardiovascular conditions identified in Theme 1;

- 1. Atherosclerotic disease and associated conditions: (ischaemic heart disease, stroke and peripheral vascular disease)
- 2. Heart rhythm and conduction disorders (tachy/brady arrhythmia, conduction defects)
- 3. Structural abnormalities of the heart (grown up congenital heart disease GUCH, valve disease)
- 4. Heart muscle disorders (infective, inflammatory, acute and chronic heart failure, cardiogenic shock)

Theme 4: Principles and Practices of Person and Family Centred Care

The content in this domain links to all syllabus areas and focuses upon the concept of person and family centred care and shared decision making. The principles and processes of reflective practice will be an integral part of the learning and will be linked to the use of patient feedback to inform cardiovascular service improvement.

- a) Person and family centred nursing care
- b) Shared decision making and barriers and facilitators to collaborative partnerships
- c) Reflective practice (evidence-based nursing experience)
- d) Interventions and tools used to support person centred care and shared decision making

Theme 5: Education and Communication

Content will include learning about adult learning theory and health literacy which will link with effective communication skills. These skills will underpin knowledge about effective health behaviour change.

- a) Introduction to educational theory and principles of adult learning
- b) Health literacy theory and health information needs
- c) Theory and principles of family assessment
- d) Principles and practices of effective communication
- e) Introduction to educational/behavioural interventions
- f) Implementation of clinical guidelines in practice (Nursing contribution)

Theme 6: Emotional and Spiritual Well-Being

This theme will link to content outlined in Themes 1. Fundamentals of Cardiovascular Pathophysiology and 3. Assessing, Planning and Managing Care. People living with cardiovascular conditions experience a range of negative emotions. Content will focus upon nursing interventions to enhance emotional and spiritual well-being in people with cardiovascular disease.

- a) Emotional responses across the patient's journey (diagnosis, hospitalisation, treatment, discharge and long term self-care including lifestyle changes and adherence to medicines)
- b) Prevalence and incidence of negative emotional responses and their impact on coping and health related quality of life (stress, anxiety, depression, hostility, anger, denial, health related quality of life)
- c) Introduction to screening and assessment tools designed to evaluate psychological well-being and health related quality of life
- d) Nursing interventions to support emotional and spiritual well-being
- e) Implementation of clinical guidelines in practice (nursing contribution)

Theme 7: Physical Well-Being and Comfort

This theme will link to content outlined in Themes 1. Fundamentals of Cardiovascular Pathophysiology and 3. Assessment, Planning and Managing Care. People living with cardiovascular conditions experience a range of symptoms which,

individually, are often non-specific to a particular condition. Accordingly content will focus upon nursing interventions designed to enhance physical comfort and well-being in people with cardiovascular disease;

- a) Patient safety in cardiovascular setting
- b) Presentation, prevalence, causation, assessment and management of cardiovascular symptoms:
 - Pain (acute and chronic, chest pain, pain from surgical wounds/intermittent claudication/limb contractures)
 - Shortness of breath (acute and chronic)
 - Gastro-intestinal symptoms (hepatic)
 - Fatigue, tiredness and sleep disturbance
 - Palpitations and syncope
 - Oedema
 - Loss of appetite and cachexia
- c) Medication side effects
- d) Exercise and rehabilitation
- e) Sexual counselling
- f) End of life care
- g) Implementation of clinical guidelines in practice (nursing contribution)

Theme 8: Evaluation of the Quality of Care

This content will support learning about systems and organisational theory that underpins quality care. The principles and practices of a quality improvement framework will be applied to care processes in cardiovascular care settings to demonstrate the link between care processes and patient outcomes.

- a) Definitions of high quality nursing care
- b) Identification of quality indicator measures that can be used
- c) Nurses role, as part of healthcare team, to promote a culture of safety leading to safe, effective, compassionate, high quality care
- d) The use of health care quality assessment methods and outcome data to assess risk, promote patient safety, conduct audits and evaluations to improve health care systems
- e) The role of technology in promoting quality and safety in healthcare settings
- f) Effective communication, shared decision making and cultural sensitivity

6. Core Curriculum Themes

In the next section the core curriculum themes will be presented with learning outcomes, knowledge and skills.

Theme 1. Fundamentals of Cardiovascular Pathophysiology

Learning outcomes:

- Understand normal and altered anatomy and physiology of the CV system
- Describe the pathophysiological changes that manifest in common CV disorders
- Recognise the pathophysiological mechanism basis of signs and symptoms and changes indicative of deterioration

Knowledge:

Understand the anatomy, pathophysiology and physical manifestations of common CV conditions outlined below:

- Atherosclerotic disease (*IHD, stroke, *PVD)
- Heart rhythm and conduction disorders (tachy/brady arrhythmia, conduction defects)
- Structural abnormalities of the heart (grown up congenital heart disease GUCH, valve disease)
- Heart muscle disorders (infective, inflammatory, acute and chronic heart failure, cardiogenic shock)

Skills:

- Apply knowledge of anatomy, physiology and pathophysiology, in clinical practice, and recognise the clinical manifestations of CVD
- Recognise normal ranges of physiological parameters and distinguish between those that are normal, abnormal and life-threatening
- Accurately measure and document physiological parameters and take appropriate action in response to alternations in physiological parameters

Attitudes & Behaviours:

- Appreciate the importance of continuing to review knowledge of pathophysiological principles

*IHD Ischaemic heart disease (stable angina and acute coronary syndrome)

*PVD Peripheral vascular disease

*Theme 2. Optimising Cardiovascular Health for People and Populations***Learning outcomes:**

- Identify risk factors associated with *CVD and recognise the impact of health inequalities on their distribution
- Demonstrate a working knowledge of ESC guidelines on prevention
- Apply evidence based strategies for the prevention of CVD in practice

Knowledge:

- Outline the burden of CVD locally and globally
- Identify modifiable, non-modifiable, emerging and novel *CV risk factors across the lifespan
- Demonstrate knowledge and understanding of ESC prevention guidelines for the management of
 - Hypertension
 - Tobacco smoking
 - Dyslipidaemia
 - Diabetes and metabolic syndrome
 - Lifestyle
- Outline key theories and principles that underpin health behaviour change and relevance to clinical practice and cardiac rehabilitation
- Describe prevention interventions used to reduce CVD mortality and morbidity

Skills:

The ability to:

- Use effective interview skills to obtain patient history to identify *CV risk factors
- Educate the patient and family about the importance of risk factor management and support self-management of healthy lifestyle changes
- Develop, document and evaluate prevention plan
- Search, critically appraise and interpret published literature
- Identify patients at risk for unnecessary hospitalisations and readmissions
- Select appropriate prevention programs for implementation by multidisciplinary team

Attitudes & Behaviours:

- Display a non-judgemental attitude and respect for patient choice
- Provide equitable care for all without discrimination

- Collaborate with the multidisciplinary team in optimising *CV health
- Promote effective communication between team members, patient and family
- Recognise the role of the nurse, (actual and potential), in the implementation of *EBP

*CV Cardiovascular, *CVD Cardiovascular Disease, *MDT Multidisciplinary Team, *EBP Evidence Based Practice.

Theme 3. Assessment, Planning and Managing Care

Learning outcomes:

- Demonstrate the ability to collect data in a systematic way which accurately reflects the immediate condition or anticipated needs of the patient
- Determine the nursing diagnosis or health-related complaint from assessment data
- Identify expected nurse sensitive outcomes with the patient, family and other healthcare providers
- Demonstrate the ability to analyze data to plan care and attain defined outcomes for a range of *CV disorders
- Implement an evidence-based plan of care and coordinate care delivery and evaluation for patients with a range of *CV disorders

Knowledge:

- Describe how to collect data for a CV health assessment
- Explain how to plan, implement and evaluate a care plan for CV patients
- Describe principles and the safe practice of *invasive and non-invasive haemodynamic monitoring
- Describe key diagnostic tests (*invasive and non-invasive) and how you would prepare the patient, family, environment and equipment
- Review life support skills in line with relevant clinical guidelines
- Describe common pharmacological agents prescribed in cardiovascular care (antihypertensives, diuretics, lipid lowering agents, antiplatelet agents, antithrombotics, thrombolytics, antiarrhythmics including initiation, mode of action and interaction)
- Identify relevant clinical guidelines and explain how to implement in practice (nursing contribution)
- Apply the above to conditions listed below:
 - Atherosclerotic disease and associated conditions (IHD, stroke and PVD): Emergency and elective revascularisation approaches. Life support skills.
 - Heart rhythm and conduction disorders: elective and emergency cardioversion, ablation, ICD*, CRT*.
 - Structural abnormalities: valvuloplasty, valve replacement, grown up congenital heart disease and structural repairs,
 - Heart muscle disorders: ICD, CRT, LVAD*, transplant.

Skills:

- Describe the principles and processes required to develop and evaluate a comprehensive, patient centred, plan of care
- Take an accurate history and perform a comprehensive physical and psychosocial health assessment
- Demonstrate the ability to correctly prepare the patient, environment and equipment required to establish venous and/or arterial access for a range of cardiology related interventions* together with ongoing nursing management
- Demonstrate the ability to correctly prepare the patient, environment and *equipment required for a range of invasive and non-invasive cardiology related diagnostic tests*
- Demonstrate the ability to provide safe, effective and compassionate nursing care reflected in accurate documentation for patients undergoing cardiology related interventions* and invasive and non-invasive cardiology related diagnostic tests*
- Demonstrate the safe administration of cardiology related medications
- Demonstrate effective life support skills

Attitudes & Behaviours:

- Consider the patient's ability to provide data to allow sufficient time to describe symptoms in their own words
- Empathize and respect patients' socio-economic, ethnical, cultural, and religious background
- Maintain privacy, dignity and confidentiality
- Recognise the boundaries of your own scope of practice
- Adhere to local policies and protocols regarding medicine administration
- Recognise the importance of the accurate documentation of patient care

*Invasive and non-invasive haemodynamic monitoring (Central Venous Pressure line, Arterial line)

*Invasive and non-invasive diagnostic tests (Echocardiography, Magnetic Resonance Imaging, Computerised Tomography, Nuclear Imaging, Cardiac Catheterisation and Angiography)

*IHD Ischaemic heart disease (stable angina and acute coronary syndrome)

*PVD Peripheral vascular disease

*ECG Electrocardiograph (12 lead, monitoring and telemetry)

*ICD Implantable Cardioverter Defibrillator, *Cardiac Resynchronization Therapy CRT, *LVAD Left Ventricular Assist Device, cardiac transplant.

*venous and/or arterial access for a range of interventions such as haemodynamic monitoring, diagnostic tests, circulatory support, fluid balance management, administration of intravenous drugs.

*We have assumed a basic knowledge of safely and accurately recording and interpreting vital signs (Temperature, Pulse, BP, Oxygen Saturation, neurological status and fluid balance)

*Theme 4. Principles and Practices of Person and Family Centred Care***Learning outcomes:**

- Demonstrate an understanding of the meaning and significance of person centred care and the importance of social support (family, friends, significant others)
- Identify potential barriers and facilitators to person centred care
- Create a culture that supports the provision of authentic person and family centred nursing care

Knowledge:

- Define 'person centred care' and 'shared decision making'
- Describe the barriers and facilitators that exist in the development of a collaborative partnership with patients and their families
- Identify tools and approaches that can be used in clinical practice to support person centred care and shared decision making
- Define reflective practice and consider how this process facilitates evidence based care

Skills:

- Demonstrate the ability to establish a therapeutic relationship* that places people at its centre and promotes physical comfort, emotional support and family and friends support.
- Apply the principles of person and family centred care to deliver and document individualised care
- Collect feedback from patients and their families, using validated measures, to evaluate care experiences and inform service improvement

Attitudes & Behaviours:

- Display a non-judgemental attitude and respect the patient's wishes, values, priorities, perspectives and choice to consent to or refuse treatment
- Provide equitable care for all with respects to individual difference regardless of ethnicity, age and gender
- Strive to provide care that maintains patient dignity, involves family/significant other and communicates compassion

- Promote patient advocacy
- Be open to feedback about service provision and use it constructively in CV service improvement

*Therapeutic relationship defined as a helping alliance based upon mutual trust, empathy, respect and compassion which characterises the provision of care to meet physical, emotional and spiritual needs.

Theme 5. Education and Communication

Learning outcomes:

- Demonstrate the ability to assess the patients learning needs
- Develop an individualised health education plan
- Use effective communication skills to provide tailored health information

Knowledge:

- Describe the key theories that explain adult learning processes
- Describe the principles and practice of effective communication
- Define the term health literacy
- Identify the impact of health literacy on learning
- Discuss barriers and enablers to effective health education and communication
- Describe the principles and processes that underpin reflective practice and recognise the potential for this approach in service improvement
- Identify examples of different technologies that can enhance patient and family education

Skills:

- Apply theories of adult education in clinical practice to address individual health information needs
- Use techniques to develop rapport with patient, family and friends
- Use active listening skills and nonverbal cues
- Develop and refine effective communication skills and evaluate these in practice
- Select a range of interactive approaches to engage the patient and family in their health education
- Choose relevant content for health information and deliver in a timely way in an accessible format in partnership with the patient and family
- Accurately document health education provision

Attitudes & Behaviours:

- Implement nursing consultations in a private space to preserve dignity and respect the right to confidentiality
- Accept and acknowledge patient and family views and feelings
- Communicate in a consistent way using terms that can be easily understood
- Respect diversity and differences in beliefs and cultures

Theme 6. Emotional and Spiritual Well-Being

Learning outcomes:

- Recognise the emotional impact that a CV diagnosis may have upon patients and their families
- Discuss the potential effect that different personality traits and associated negative emotions may have upon health related quality of life, compliance and prognosis
- Consider the significance of religion and spirituality as moderators of well-being in patients living with CV and their families

Knowledge:

- Describe emotional and coping responses to diagnosis of CVD
- Quantify the prevalence and incidence of negative emotional responses (e.g. stress, anxiety, depression, hostility, anger, denial, etc.) and their impact on psychological adjustment and health

related quality of life

- Identify screening and outcome assessment tools designed to measure psychological status and health related quality of life
- Describe the role of religion/spirituality in psychological adjustment to CV
- Describe nursing interventions to support emotional and spiritual well-being
- Identify relevant clinical guidelines and consider how these might be implemented in clinical practice

Skills:

- Show the ability to recognise and understand the emotions, needs, and concerns of patients and their families
- Use screening and assessment tools to assess emotions, coping and health related quality of life in alignment with scope of practice
- Recognise when referral to a mental health professional is warranted
- Promote evidence based practice through accessing and maintaining ESC guidelines and other high quality evidence to promote the emotional and spiritual well-being of those in your care

Attitudes & Behaviours:

- Develop a *therapeutic relationship with patients and their families to promote emotional well-being
- Respect and accommodate diversity in patients' and their families' religious and spiritual beliefs
- Recognise the need to reflect upon your own personal emotions when caring for others and the need to maintain a balance between occupational demands and personal resources
- Deliver nursing care in a way that promotes positive health related quality of life from diagnosis to end of life

*Therapeutic relationship defined as a helping alliance based upon mutual trust, empathy, respect and compassion which characterises the provision of nursing care to meet physical, emotional and spiritual needs.

Theme 7. Physical Well-Being and Comfort

Learning outcomes:

- Promote physical well-being and comfort during periods of ill health and immobility
- Identify, recognise, evaluate and alleviate the common symptoms of CV disease through the safe administration of pharmacological and non-pharmacological interventions
- Identify & evaluate complex physical, psychological, social and environmental needs relevant to CVD across the adult lifespan (include cardiac rehabilitation, sexual counselling and end-of-life care)

Knowledge:

- Describe the presentation, assessment and management of common cardiovascular symptoms:
 - Pain (acute and chronic, chest pain/pain from surgical wounds/intermittent claudication/limb contractures)
 - Shortness of breath (acute and chronic)
 - Gastro-intestinal symptoms (hepatic)
 - Fatigue, tiredness and sleep disturbance
 - Palpitations and syncope
 - Oedema
 - Loss of appetite and cachexia
 - Medication side effects
- Identify, recognise, evaluate and alleviate the common symptoms of CV conditions* through the safe administration of pharmacological and non-pharmacological interventions
- Identify & evaluate complex physical, psychological, social and environmental needs relevant to CVD conditions across the adult lifespan (from diagnosis to end-of-life and including sexual counselling)
- Identify relevant clinical guidelines and consider how these might be implemented in clinical practice

Skills:

- Ability to deliver nursing care to promote physical comfort and well-being for patients with CV from diagnosis to end of life
- Use validated pain scales to assess and manage pain to promote patient comfort
- Use validated scales to assess other common symptoms (such as dyspnoea, fatigue, appetite)
- An ability to implement evidence based guidelines in clinical practice

Attitudes & Behaviours:

- Recognise that symptoms are a subjective experience
- Respect differences in beliefs and cultures that may influence the expression of symptoms
- Maintain privacy, dignity and confidentiality
- Work effectively as a member of a multidisciplinary team to promote effective communication to optimise symptom management
- Recognise the importance of delivering evidence based practice

*CV conditions atherosclerotic disease (*IHD, stroke, *PVD), heart rhythm and conduction disorders (tachy/brady arrhythmia, conduction defects), structural abnormalities of the heart (grown up congenital heart disease GUCH, valve disease), heart muscle disorders (Infective, inflammatory, acute and chronic heart failure, cardiogenic shock)

*Theme 8. Evaluation of the Quality of Care***Learning outcomes:**

- Define quality care
- Define the measurement of quality indicators for nursing care
- Have a broad knowledge of factors that influence care coordination and successful transition throughout the patient journey
- Recognise the potential of emerging technologies for quality and safety in supportive care.
- Recognise the role of teamwork, communication, and work environment in influencing patient safety

Knowledge:

- Identify the key principles of risk assessment, patient safety, audit and evaluation of adverse events: integrating care (which includes interception of errors by others-near misses)
- Describe key features of systems and organizational theory as they relate to the design, delivery, and evaluation of health care delivery
- Demonstrate current knowledge of the standards of care within your own organisation and associated challenges
- Identify the role that technology can play in the provision of quality care
- Consider ways in which patients' perspectives can be integrated into audit and quality improvement efforts

Skills:

- Identify, develop and enhance activities that promote a culture of safety
- Adhere to evidence based standards to ensure optimal care
- Initiate safety measures based on evidence based guidelines
- Ability to use basic and advanced IT skills applied to electronic health records
- Apply relevant key indicators in quality care at the unit level
- Apply audit and evaluation techniques to improve service design and implement quality care
- Participate in the development of new standards of care

Attitudes & Behaviours:

- Keep abreast of current evidence and adhere to guidelines to avoid ritualistic practice

- Adhere to professional commitment to do no harm and report poor practice
- Contribute to a culture of safety as a member of multidisciplinary team
- Verbalize and demonstrate a commitment to learning, willingness to question and to change practice when indicated
- Convey a proactive culture of quality and safety when supporting and mentoring novices in clinical practice.

7. Conclusion

We have presented an overview of the core curriculum for cardiovascular nursing education and detailed its development. This is an important first step as we understand this is the first document of its kind to take a European perspective on educational provision for cardiovascular nursing education. The core curriculum is person and family centred and informed by educational theory. It is designed to be used flexibly and can function as both a 'map', that identifies important themes that should be included in nurse education, and also a tool that provides an educational 'bridge' between initial preparation and advanced specialist practice. Our aspiration is to ensure that cardiovascular nursing education programs address the domains and learning outcomes presented in this core curriculum which will help streamline education across Europe. We hope that institutions of nursing education, professional organizations, and nursing regulatory bodies in European countries will utilize this curriculum framework as new cardiovascular nursing education and continuing professional education programs are developed or revised. The next steps are to address some of the challenges linked to the accreditation of continuing professional education modules (see Appendix 2) and to translate the document to expedite uptake across countries. While this core curriculum is far from perfect, it does represent a brave start, rather than a final end point.

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References

1. Astin F, Carroll DL, Ruppert T, Uchmanowicz I, Hinterbuchner L, Kletsios E, Serafin A and Ketchell A on behalf of the Education Committee of the Council on Cardiovascular Nursing and Allied Professions. *Eur J Cardiovasc Nur*. Epub ahead of print 23 February 2015. DOI:10.1177/1474515115572048.
2. Gillebert TC, Brooks N, Fontes-Carvalho R, Fras Z, Gueret P, Lopez-Sendon J, Salvador MJ, Van den Brink RA and Smiseth O. ESC Core Curriculum for the General Cardiologist. *Eur Heart J* 2013; 30: 2381–2411.
3. ESCeL ESC eLearning Platform, learn.escardio.org (accessed March 2015).
4. Astin F, Carroll DL, De Geest S, Martensson J, Jones I, Hinterbuchner L, Jennings C, Kletsios E and Serafin, Timmins F. Education for nurses working in cardiovascular care: a European survey. *Eur J Cardiovasc Nur* 2014; 13: 532–540.
5. European nursing training programme for clinical expertise in heart failure, <http://www.escardio.org/communities/HFA/committees/hfmanagement/Pages/Training.aspx> (accessed March 2015).
6. The Oxford English Dictionary. 11th ed. 2008. Print.
7. Zimmerman, BJ. Becoming a self-regulated learner: An overview. *Theor Prac* 2002; 41: 64–70.
8. Johnson DW, Maruyama G, Johnson R and Nelson D. Effects of Cooperative, competitive and individualistic goal structures on Achievement: A meta-analysis. *Psychol Bull* 1981; 89: 47–62.
9. Kolb DA and Fry R. Toward an applied theory of experiential learning. In: Cooper C (ed). *Theories of Group Process*, London: John Wiley.
10. Benner P. From novice to expert. *Am J Nurs* 1982; 82: 402–40.
11. Lusk JM and Fater K. A concept analysis of patient-centered care. *Nurs Forum* 2013; 48:89–98.
12. Jenkinson C, Coulter A and Bruster S. The Picker Patient Experience Questionnaire: Development and validation using data from in-patient surveys in five countries. *Int J Qual Health C* 2002; 14: 353–358.
13. Ageing in the twenty-first century: A celebration and a challenge. New York: UNFPA. London: Help Age International, 2012.

Appendix 1: Definitions and Glossary

Cardiac Nursing

Cardiac nursing is a nursing specialty that works with patients who suffer from various conditions of the cardiovascular system.

Curriculum

A curriculum is a formal education plan for a training programme that is intended to achieve specific established learning outcomes.

Educational Programme

- a program providing students opportunities to obtain knowledge and/or skills in one or more topics
- academic program - (education) a program of education in liberal arts and sciences (usually in preparation for higher education)
- training program - a program designed for training in specific skills
- vocational program - a program of vocational education

Knowledge

Facts, information, and skills acquired through experience or education; the theoretical or practical understanding of a subject.

Learning Outcome

Statements of what a learner can be expected to know, understand and/or do as a result of a learning experience.

Skills

Proficiency, facility, or dexterity that is acquired or developed through training or experience.

Syllabus

An outline or a summary of the main points of a text, lecture, or course of study.

Appendix 2: Potential Mechanisms for Future Accreditation Process

Our aim is to develop a suite of continuing professional education modules, based upon the themes of the core curriculum, for flexible delivery via the EsCel platform. In the future we would aspire to accredit the modules. We envisage that this accreditation might take place in one of two ways:

1. Adoption of the ESC CCNAP core curriculum

This method is particularly suitable for institutions where there is no existing local or national curriculum. Using the eight themes described above, a programme of study would be developed detailing methods of learning and teaching and assessment. To ensure parity in the review process, Institutions would be provided with a template as a basis to structure their own curriculum. This could be reviewed by a Subgroup of CCNAP Education Committee and if approved, Institutions could describe the programme as being accredited by the ESC.

2. Accreditation of existing programmes

This method would be used for existing programmes in cardiac nursing. Institutions would be required to demonstrate how their programmes match the learning objectives, knowledge outcomes and skills and behaviours of the ESC core curriculum. Detail of learning and teaching and methods of assessment would also need to be provided. Institutions would therefore need to submit their curriculum documentation and complete a form mapping their curriculum against the ESC core curriculum. This would be reviewed by the Subgroup of the CCNAP Education Committee and if approved, Institutions could describe the programme as being accredited by the ESC CCNAP.

3. Accreditation of modules

This method would be used for existing programmes in cardiac nursing. Institutions would be required to demonstrate how their programmes match the learning objectives, knowledge outcomes and skills and behaviours of the ESC core curriculum. Detail of learning and teaching and methods of assessment would also need to be provided. Institutions would therefore need to submit their curriculum documentation and complete a form mapping their curriculum against the ESC core curriculum. This would be reviewed by the Subgroup of the CCNAP Education Committee and if approved, Institutions could describe the programme as being accredited by the ESC CCNAP.